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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,356	07/30/2001	Kenichi Miyoshi	L9289.01164	1590

7590 12/28/2004
Stevens David Miller & Mosher
Suite 850
1615 L Street NW
Washington, DC 20036

EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/890,356

Applicant(s)

MIYOSHI, KENICHI

Examiner

Qutub Ghulamali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-7 and 9-12 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/30/2001, 7/25/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 3, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawahashi et al (US Patent 6,069,912).

With reference to claims 1, 8, Sawahashi discloses a communication diversity receiver and its control method comprising:

feedback information calculating means (abstract; fig. 2, element 212) for calculating feedback information using values obtained from respective common known signals transmitted respectively from different (elements 201A-C) antennas of a base station apparatus in closed-loop transmission diversity (col. 3, lines 3-10, 65-67; col. 4, lines 1-7; col. 6, lines 35-40);

phase correcting amount calculating means (phase error, see col. 6, lines 36-62) for calculating a phase correcting amount for correcting phase rotation with which said base station apparatus communication channel signal in said diversity, based on the feedback provides a transmission information; and

coherent detection means (abstract; col. 6, lines 5-15) for performing coherent detection on the communication channel signal using a second channel estimation value obtained by the

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subjecting a channel estimation value obtained from the communication channel signal to phase correction using the phase correcting amount (fig. 5, elements 509, 510; col. 8, lines 22-33; col. 9, lines 8-42). Even though Sawahashi's discloses a space diversity reception system having N-multipath signals from M number of antennas carrying out phase estimation using known pilot symbols, Sawahashi, however, does not disclose the claimed subject matter "respective first channel estimation values obtained from respective common known signals" explicitly, a person of ordinary skilled in the art would have understood that the received signals from different antennas must have been converted to channels to represent the signals from each antenna, a first, second, etc., providing to the system useful information in data recovery. Therefore, the claimed subject matter "respective first channel estimation values obtained from respective common known signals" would have been obvious to one skilled in the art.

Regarding claim 2, Sawahashi, discloses in combination with other claimed limitations, channel estimating means for performing channel estimation using the communication channel signal subjected to phase correction using the phase correcting amount (col. 10, lines 29-45).

Regarding claim 3, Sawahashi discloses weighting averaging means (figs, 2, 5; elements 21, 517) for performing weighting on second channel estimation values over a plurality of slots to average, wherein the coherent detection is performed on an average of weighted channel estimation values.

Allowable Subject Matter

3. Claims 4-7, 9-12 allowed.

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4. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4, 5, 6, 7, the prior art of interest, considered as a whole, neither teaches nor suggest the overall combination showing communication quality measuring means for measuring communication qualities of the communication channel signal subjected to coherent detection and the communication channel signal subjected to phase correction using the phase correcting amount and to coherent detection; and selecting means for selecting one with an excellent measured communication quality from the communication channel signals.

Such limitations, as recited in claims 4, 5, 6, and 7, are neither anticipated nor rendered obvious by the prior art.

Regarding claims 9-12, the prior art of interest, considered as a whole, neither teaches nor suggest the overall combination of transmitting, in said base station apparatus, a communication channel signal provided with phase rotation based on the feedback information to said communication terminal apparatus. Such limitations, as recited in claims 9-12, are neither anticipated nor rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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US Patents.

Anvari et al (US Patent 5,203,025) discloses a selection circuit in a space diversity system.

Tomisato et al ((US Patent 5,504,783) shows a frequency diversity transmitter and receiver.

Dabak et al (US Patent 6,804,311) discloses diversity detection for WCDMA provide detection and channel estimation.

Publications:

Ari Hottinen et al, "Transmit Diversity by Antenna Selection in CDMA Downlink, IEEE, 1998

Andoh H et al "Channel Estimation Using time Multiplexed Pilot Symbols For Coherent RAKE

Combining For DS-CDMA Mobile Radio", IEEE, September 19997, R & D , NTT Mobile

Communication Network, Kanagawa, Japan.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014.

The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

A handwritten signature in black ink, appearing to read "Jayanti Patel", with a long horizontal line extending to the left.

JAYANTI PATEL
SUPERVISORY PATENT EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.

December 21, 2004.